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### REMARKS / DISCUSSION OF ISSUES

Claims 10-11 and 13-20 are pending in the application.

The Office action rejects claims 13-15 and 17 under 35 U.S.C. 102(a) over Kim (USP 5,963,856). The applicants respectfully traverse this rejection.

Claim 13 claims a method that includes demodulating an IF signal to provide a digital output signal and a figure of merit associated with the digital output signal, and adjusting an RF filter based on the figure of merit.

The Examiner's attention is requested to MPEP 2131, wherein it is stated:

"A claim is anticipated only if *each and every element* as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The *identical invention* must be shown in as *complete detail* as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Kim fails to teach demodulating an IF signal to provide a figure of merit associated with a digital output signal, and adjusting an RF filter based on the figure of merit.

The Office action asserts that Kim teaches providing a figure of merit at column 4, line 60 through column 5, line 29. The cited text follows:

"The output 10 MHz IF signal from mixer 205 is then filtered by bandpass filter 209 to eliminate undesired interfering signals from the 10 MHz IF signal band. Thereafter, as previously described, the IF signal is demodulated to baseband I ("In" phase) and Q ("Quadrature" phase) signals. Demodulation is done in a conventional manner in I/Q demodulators 212 and 213, using signals from local oscillator 214 (LO2) and phase shifter 215. Thereafter, baseband processing unit 210, which, illustratively, includes an Analog to Digital Converter (ADC) 211 and a digital receiver 216, recovers the baseband signal in a conventional manner.

Thus, my wireless RF receiver of FIG. 2 eliminates the 2nd-IF stage thereby enabling digital demodulation (or down-conversion to baseband) to be applied after the 1st IF stage.

The tunable filter 204 can be implemented with lumped elements and active switches as shown in FIG. 3. FIG. 3 shows an illustrative tunable elliptic bandpass filter for use as the tunable filter 204 of FIG. 2. The filter shown is a 3-order elliptic filter (pi section filter) including a first shunt branch 301, a series branch 302 and a second shunt branch 303. The first and

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second shunt branches are essentially identical. The first and second sections 302a and 302b of the series branch 302 are also essentially identical. The input to the filter is at the junction of shunt branch 301 and the first series section 302a, while the output of the filter is at the junction of shunt branch 303 and the second series section 302b. Each of the branches 301, 302a, 302b, and 303 includes a parallel tuned element including a common inductor across which one or more of four capacitors can be selectively switched into the circuit via MOS switches. These switched capacitors enable the bandpass frequency characteristic of the 3-order elliptic filter to be changed under control of signals A, B, C, and D. Controller 304 generates signals A, B, C, and D in response to a received control signal from receiver 213 of FIG. 2." (Kim, col. 4, line 60 – col. 5, line 29.)

As can be seen, the cited text of Kim fails to teach providing a figure of merit based on a digital output signal.

The Office action asserts that Kim teaches adjusting an RF filter based on a figure of merit at column 5, lines 33-36. The cited text follows:

"The center frequency can be tuned to 869, 875.25 881.5, 887.75, and 894 MHz by switching on appropriate parallel capacitors." (Kim, col. 5, lines 33-36.)

As can be seen, the cited text of Kim fails to teach adjusting a filter based on a figure of merit based on a demodulated digital output signal. Contrarily, Kim teaches channel selection from among five different RF frequencies within a given "hyperband" of many channels so that the bandwidth of the IF section can be one-fifth as wide as one that accommodates the entire hyperband: "The hyperband consists of many channels. The receiver should be capable of selecting any one channel in the hyperband on command." (Kim, col. 1, lines 20-23.) Further, Kim teaches that a conventional AFC loop is used to control the frequency (Kim, column 4, lines 19-33), and is silent with regard to using a figure of merit based on a demodulated digital output signal in this loop.

Because Kim fails to teach providing a figure of merit associated with a demodulated digital output signal, and because Kim fails to teach adjusting an RF filter based on such a figure of merit, the applicants respectfully maintain that the rejection of claims 13-15 and 17 under 35 U.S.C. 102(a) over Kim is unfounded, per MPEP 2131.

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The Office action rejects:

claims 16 and 18 under 35 U.S.C. 103(a) over Kim and Porambo et al. (USP 5,280,638, hereinafter Porambo); and  
claim 20 under 35 U.S.C. 103(a) over Kim and Liebetreu et al. (USP 5,949,832, hereinafter Liebetreu).

The applicants respectfully traverse these rejections.

The Examiner's attention is requested to MPEP 2142, wherein it is stated:

"To establish a *prima facie* case of obviousness ... the prior art reference (or references when combined) *must teach or suggest all the claim limitations*... If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

In these rejections, the Office action relies upon Kim for teaching the elements of claim 13, upon which each of these rejected claims depends. As noted above, Kim fails to teach the elements of claim 13.

Because Kim fails to teach providing a figure of merit associated with a demodulated digital output signal, and because Kim fails to teach adjusting an RF filter based on such a figure of merit, as specifically claimed in claim 13, the applicants respectfully maintain that the rejections of claims 16, 18, and 20 under 35 U.S.C. 103(a) that rely upon Kim for these teachings is unfounded, per MPEP 2142.

The Office action rejects claims 10 and 11 under 35 U.S.C. 103(a) over Kim and Sakashita et al. (USP 4,939,789, hereinafter Sakashita). The applicants respectfully traverse this rejection.

In this rejection, the Office action relies upon the assertions regarding Kim and the elements of claim 13 (Office action, section 6). As noted above, Kim fails to teach the elements of claim 13; as such, the applicants respectfully maintain that the rejection of claims 10 and 11 under 35 U.S.C. 103(a) that relies upon Kim for these teachings is unfounded, per MPEP 2142.

The Office action rejects claims 13-20 under 35 U.S.C. 103(a) over Porambo and Liebetreu. The applicants respectfully traverse this rejection.

As noted above, claim 13 claims a method that includes demodulating an IF

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signal to provide a digital output signal and a figure of merit associated with the digital output signal, and adjusting an RF filter based on the figure of merit.

Both Porambo and Liebetreu fail to teach demodulating an IF signal to provide a digital output signal and a figure of merit associated with the digital output signal, and adjusting an RF filter based on the figure of merit.

Porambo specifically teaches adjusting the RF filters based on an output of an IF section 41, before the demodulation stage 42 (Porambo's FIG. 3).

The Office action asserts that Porambo is silent with regard to a demodulator, and therefore one of ordinary skill in the art would combine Liebetreu's digital demodulator with Porambo to produce the applicants' claimed invention. The applicants respectfully disagree with this assertion, and respectfully disagree that a combination of Porambo and Liebetreu would produce the applicants' claimed invention.

Porambo specifically illustrates a demodulator 43 in FIG. 3, and teaches its operation at column 4, lines 27-29. Porambo does not teach that an output of this demodulator is used to control the RF filters, and specifically teaches that an output of a prior stage is used to control the RF filters. Assuming in argument that the teachings of Porambo and Liebetreu can be combined, the combination of Porambo and Liebetreu as suggested in the Office action would merely result in a replacement of Porambo's demodulator 43 with Liebetreu's digital demodulator 28, without any suggestion that the operation of Porambo's circuit prior to the demodulator 43 should or could be changed.

Because both Porambo and Liebetreu fail to teach demodulating an IF signal to provide a digital output signal and a figure of merit associated with the digital output signal, and adjusting an RF filter based on the figure of merit, and because a combination of Porambo and Liebetreu would not lead to the applicants' claimed invention, the applicants respectfully maintain that the rejection of claims 13-20 under 35 U.S.C. 103(a) over Porambo and Liebetreu is unfounded, per MPEP 2142.

The Office action rejects claims 10 and 11 under 35 U.S.C. 103(a) over Porambo, Liebetreu, and Sakashita. The applicants respectfully traverse this

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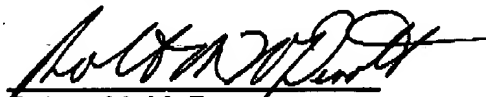
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rejection.

In this rejection, the Office action relies upon the assertions regarding Porambo and Liebetreu and the elements of claim 13 (Office action, section 8). As noted above, Porambo and Liebetreu fail to teach the elements of claim 13; as such, the applicants respectfully maintain that the rejection of claims 10 and 11 under 35 U.S.C. 103(a) that relies upon Porambo and Liebetreu for these teachings is unfounded, per MPEP 2142.

In view of the foregoing, the applicants respectfully request that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application to be in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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